Engelmann.

Ovariotomy.

Reprint from the St. Louis Courier of Medicine, April, 1882.

OVARIOTOMY.

Difficulties, Diagnostic and Operative. Continued Menstruation after Double Ovariotomy.[1]

By Geo. J. Engelmann, M. D., St. Louis, Mo.

Prof. of Obstetrics in Post-Graduate School of the Missouri Medical College; Fellow of the American Gynecological Society, of the London Obstetrical and Pathological Societies; Consulting Surgeon St. Louis Female Hospital; St. Ann's Lying-in Asylum, Etc.

At the annual meeting of the American Gynecological Society, held in New York in September 1881, Dr. T. G. Thomas read a paper entitled "Extensive Adhesions of the Bladder as a Complication of Ovariotomy," a rare, dangerous, and usually fatal complication. Dr. Thomas himself has had four or five of these cases of extensive adhesions in which the bladder is drawn up toward the umbilicus and spread out, fan-like, over the anterior surface of the tumor; and literature, he says, furnishes us with seven such, in all of which a fatal issue resulted; directly, in consequence

[1]Abstract of paper read before the Medico-Chirurgical Society of St. Louis, Nov. 28, 1881, which appears in full in the April number of the *American Journal of Medical Sciences.*

of injury to the bladder, or, indirectly, on account of the adhesions, which prevented the removal of the tumor.

In the discussion following the reading of Dr. Thomas' paper, it was my good fortune to be enabled to report the successful termination of an ovariotomy thus complicated, and I determined, at some opportune time, to relate this case more fully. In doing this, I will also call attention to certain difficulties in the diagnosis of ovarian tumors, and in the operation itself, which I have encountered, and which appear very astonishing to the surgeon who relies upon the distinctly enunciated rules of the text-book for guidance. I will endeavor to state briefly these difficulties, diagnostic and operative, as a caution to the surgeon.

The *Difficulties* I refer to are:

1. Of determining the existence of adhesions, however firm, to yielding parts.

2. Of differentiating between tumors, (*a*) uterine and ovarian; (*b*) fibro-cystic and colloid.

3. Of determining the elongation and attachments of the bladder.

In the *Operation* I would urge:

1. A regard for the safety of the enlarged bladder.

2. The importance of securing deep and firm union of the abdominal incision in order to avoid hernia in the convalescent.

3. The importance of placing entire reliance upon the ligature, and of using fine braided silk, cutting the ligatures short and dropping them at once.

4. Care in the use of carbolic acid, and avoidance of Listerism (in the strict sense of the term) in ovariotomy.

5. The early operation, if an operation is at all indicated.

The two following cases I have selected as explanatory of the above points, and cite them only as corroborating the statements I have made:

CASE I.—COLLOID TUMOR OF THE RIGHT OVARY—CYSTIC DEGENERATION OF THE LEFT—PERITONEAL CYSTS—EXTENSIVE ADHESIONS OF THE ELONGATED BLADDER—DOUBLE OVARIOTOMY—CONTINUED MENSTRUATION.

Mrs. T., from Kansas City, consulted me in April, 1880, on account of an abdominal enlargement, which she had noticed since the preceding fall; but after attaining moderate dimensions it had ceased to grow, and remained *in statu quo* since January, 1880.

Patient, the mother of five children, was 32 years of age, had always enjoyed the best of health; menstruation had been perfectly normal; labors easy, and recovery rapid. Although losing flesh to some extent, her health was perfect, and the abdominal enlargement was accounted for by pregnancy, notwithstanding the continuation of the menstrual flow and its increased quantity.

Upon examination I found a semi-solid tumor, of uniform consistency, extending four and one-half inches above the navel, freely movable, gliding from side to side as the patient turned in bed, non-adherent as far as I could judge, certainly not to the uterus or abdominal walls; nor could I trace any history of peritoneal inflammation or even tenderness. A friend, who saw the case in consultation with me a few days later, discovered a slight, but distinct, fluctuation about and below the navel, which I had not observed in my previous examination, or which did not exist at the time. He concurred in the absence of adhesions, but diagnosed a fibro-cystic tumor in place of my colloid, or young fibroid. Patient would not consent to the operation advised, on account of her good health and the stability of the tumor; but the inauguration of a distinctly visible growth caused a change of mind, and I was permitted to prepare her, by baths, aperients, tonics, quinine and nourishing food, for the operation, which took place Thursday, April 22, 1881, in the presence, and with the assistance of Drs. Prewitt, Schenck, Engelmann Sr., Nelson and Fischel.

The urine was removed as usual, but the catheter did not pass beyond the usual depth; nor was the fluid withdrawn peculiar in quantity or quality. The room, which had been cleansed and disinfected, was kept moist and hot, always over 76°F. or 80°F.; vessels with hot water were placed about, and two sprays steamed a mist of carbolic acid over couch, patient and operators from quite a distance, but not into the open wound, or over the hands of the surgeon, because I deem carbolic acid injurious to the exposed peritoneum and dangerous to the rapidly absorbing surfaces of the numerous and freely exposed wounds.

Hardly had the abdominal incision been made when our troubles began. I felt sure that I had cut through the peritoneum in the upper angle of the incision, near the umbilicus (I dislike to cramp myself by a small incision), but instead of cyst-wall or intestinal coils, a thick, soft, purplish tissue, adherent to the abdominal walls, came to view. As we learned later, after tedious and trying explorations, it was the distended bladder, elongated and drawn upward by its attachment to tumor and omentum; but then it caused great annoyance and loss of time. In separating this layer, and penetrating into the actual cavity, a number of delicate, nut-sized cysts, attached to long thread-like pedicles, slipped out of the opening and mystified us for a time; the more we pulled the more they seemed to unravel, and the longer and longer they grew; some were tucked back, some ligated; later, all were tied, cut short and dropped, proving pedunculated cysts, eight to ten in number, eight to fourteen inches in length, originating in the peritoneum, between liver and diaphragm.

The heavy bands uniting the tumor with omentum and bladder, and the bladder with the omentum, were tied with braided silk, cut short and dropped; the last-mentioned ligature was by far the most difficult, as by the catheter only was I enabled to define the fundus of the bladder and determine the beginning of the omentum; the long pedicle of the large colloid tumor was treated in the same way, so

also the small cyst of the left ovary; innumerable bleeding points and some of the many thread-like adhesions were tied. I tied at once with the very finest braided silk, trusting neither to torsion, pressure nor caustics, as with the ligature we are for ever safe and no time is lost, but the finest silk must be used, and the thread at once cut short and dropped, that it may not interfere.

Much time was consumed in thoroughly cleansing the abdominal cavity, tying every oozing point as it appeared, using sponges, previously disinfected, but during the operation cleansed and wrung out in *pure*, hot water. Four ligatures of heavy silk and twenty or more smaller ones were left in place, and after the vessels had all been secured and the cavity thoroughly cleansed, the abdominal incision was closed with *heavy* silver wire, clamped by flattened shot; one ligature only, confining the fundus of the bladder, was fastened within the incision.

Patient recovered without a bad symptom and without experiencing any suffering, or even any but the most trifling annoyance. Milk constituted the main article of diet, and but very little morphine was used. Pulse and temperature were but little above the normal, being exceptionally high on the third day—pulse 86; temp. 101° F.; upon the fourth day the normal was rapidly approached—pulse 82; temp. 99.5° F. The variation was soon so trifling that both pulse and temperature may be said, practically, to have resumed their ordinary character.

I have seen the patient occasionally since the operation, and have heard from her but recently, and can safely say that she enjoys the very best of health, is hearty and strong, and notwithstanding the *complete* removal of both ovaries (specimens proving the statement), remains in possession of all womanly attributes in the most complete sense of the term; she is a fond wife and mother, with rounded limbs and womanly voice and instincts, and is one of those few cases, of patients surviving double ovariotomy, who continue to menstruate with regularity: it is menstru-

ation properly speaking, not metrostaxis, as it is termed by some, as all the symptoms and characteristics of menstruation before the operation now accompany the monthly flow.

Case II.—Suppurating Ovarian Fibro-Cyst.

I was called to Belleville in July, 1875, to see Miss S. X., aged 37, a tall, somewhat angular, slightly anemic, brunette, who had been suffering from uterine hemorrhages, and complained of a feeling of constriction in the abdomen, where I found a solid, hard, fibroid enlargement, somewhat irregular in shape, reaching to the umbilicus and apparently immovably cemented with the womb, which seemed distorted, as I could not enter the cavity over one and one-half inches.

Her history was peculiar: first menstruated in her 13th year; the flow continued with regularity, but considerable suffering, until she was 18, when she took a severe cold while washing during the period, which was followed by profuse flooding and complete amenorrhea. In her 21st, and again in her 33d year, she was prostrated by severe sickness, and after each attack the period returned slightly for a few months, again ceasing, patient relapsing into her apparently normal condition of amenorrhea. Flooding, rather than a return of menstruation, came on in 1874, when she was 36; the loss of blood became more severe, patient losing flesh until I was summoned, when by the use of sponge tents, and the application of iron to the uterine cavity, and an energetic ergot treatment, the hemorrhages were stopped, and she improved greatly; the use of ergot internally was alternated with subcutaneous injections of the aqueous extract.

An examination, made at a later period, revealed a congested uterus, five inches in length, with a very tortuous canal, the organ immovably wedged in the pelvic cavity by a solid fibroid tumor in the hollow of the sacrum, and one anterior to the womb; both firmly united to it, neither

movable to any extent, and their relation to each other not very distinct.

As the patient was improving, I was unwilling to advise an operation until more urgent symptoms should appear, procrastination, that fatal error of which I am now well cured.

In January, 1876, the hemorrhages re-appeared, and with them came a train of most unfavorable symptoms—fever, nausea, loss of appetite; pulse and temperature reaching an alarming height; suppuration was evidently going on in the tumor, as shown by the softening and indistinct fluctuation in its right and left upper portions; now—as life seemed endangered—was, by consent of patient and physicians, the time to operate. How often have I since regretted my submission to this erroneous doctrine; but I had merely accepted the teaching of authorities; now sad experience and the death of many a poor sufferer, who was taken suddenly away by increasing size of the tumor, whilst waiting for the time to come when "life should be endangered," and patient and physician might consent to place the case in my hands for operation, have taught me the *importance of an early operation.* Had I urged this patient, as I urge patients now, to submit to the operation, provided an operation must be performed and is feasible, her chances would have been far better; with a vigorous body, healthy digestion, and strong will, she would have borne the operation far better than with a pyemic, failing body.

By careful treatment, and the most devoted nursing, her condition was so much improved that an operation seemed justified, and even necessary.

February 13th, 1876, I removed this supposedly *uterine* fibro-cyst without much difficulty; finding adhesions but few and slight, and the supposed connection of uterus and tumor merely a mechanical impaction.

The operation was done in the presence of Drs. Baumgarten, Hodgen, Boisliniere, Schenck, Engelmann Sr., Nel-

son and Fischel, and with the most careful observation of all antiseptic precautions; spray, so as to numb my hands, carbolic acid for sponges, instruments, ligatures and dressing.

The patient steadily failed from the moment she fully recovered from the effects of the anesthetic, the temperature rising, and pulse and respiration growing more rapid, until she died, thirty-six hours after the operation—in my mind a victim to carbolic acid and late ovariotomy.

DEDUCTIONS.

I have endeavored to relate the histories of the preceding cases as briefly as is consistent with the object of this paper, and as pointedly as possible, in order to call attention to the difficulties, diagnostic and operative, which present themselves, and to show how unreliable many rules laid down in text-books may prove when tested in practice; how cautious the operator must be, and how decidedly each case must be judged upon its own merits, and how imperfect our supposedly perfect means of diagnosis have proven, how helpless they leave us.

Hints as to Diagnosis.

1. With regard to the *existence of adhesions*, we have seen how impossible it is (*a*) to detect their existence, if connecting the tumor with bladder, omentum or intestines, as in Case I; the smooth growth rolled freely about in the abdominal cavity, and no history of any peritoneal trouble could be traced. Hence, however simple the condition of affairs may appear after even the most careful examination, the operator must be prepared for any emergency, as these very undiagnosible adhesions to the bladder are among the most dangerous, being a surprise to the surgeon, and detected only by the knife.

(*b*) On the contrary, in a non-adherent tumor, firm adhesion may be diagnosed by reason of the immobility of a comparatively small mass, due merely to mechanical impaction of uterus and tumor in the pelvis, as in Case II.

2. *Difficulty of differentiating between abdominal tumors of certain kinds.*

(*a*) The conditions given in Case I. would, under all circumstances, lead to an excusable error in diagnosis; at one time the semi-solid nature of the tumor seemed apparent; at another, the indistinct fluctuation of a small quantity of urine in the fan-shaped bladder, after careful examination, led to the supposition of the existence of a fibro-cyst; the characteristic pear-shaped enlargement usually caused by a distended bladder was wanting, but a certain fluctuation seemed evident in the umbilical region, and extended toward the sides, gradually lessening as the symphysis was approached, on account of the increased compression of the bladder in that region, between tumor and pelvic brim.

(*b*) In Case II. I deem my own diagnosis of a uterine fibro-cyst justifiable, and even necessary, by reason of the immobility of uterus and tumor, and their firm connection, due to mechanical impaction; the round, hard fibroid behind the uterus seemed to form part of one and the same body, so closely were they forced together; the copious hemorrhages and the very marked action of ergot on the tumor encouraged me in my opinion. The early cessation of the menses, without menstrual molimina, alone seemed to point to the ovarian character of the growth, and this might have been explained by a chronic uterine affection, due to the exposure at the time of the menstrual flow.

3. *The difficulty of recognizing elongation and expansion of the bladder.*

Theoretically it may appear a very simple matter to determine this condition, but, practically, it is a fact, that it is likely to be overlooked by the most expert diagnosticians and operators.

(*a*) The catheter or sound cannot always be passed to the fundus by reason of the compression of the bladder between tumor and symphysis.

(*b*) Frequently no disturbance can be detected in the urinary secretion, either as to quantity or quality.

As it is one of the most dangerous adhesions, the bladder should be carefully explored in every instance, before entering upon an operation, by a long male catheter of rubber, French or English, so that the attempt at least be made to discover this condition, which I look upon as greatly to be dreaded; none other is so dangerous, none other so fatal as a bisected bladder, the almost inevitable consequence of our ignorance; hence we should scrupulously endeavor to avoid it.

Operative Hints.

1. *A regard for the safety of the enlarged bladder*, even if the catheter has *not* told of its existence, should make the operator extremely cautious in the completion of the abdominal incision, especially if he does not readily detect the peritoneum, that pale, whitish-blue membrane, but meets a peculiar and abnormal condition of affairs, a thick, purplish membrane, more or less intimately connected with the abdominal wall. The operator must not cut through this tissue, which is either a distended bladder, a thickened omentum, or cyst wall; but he should carefully endeavor to sever this layer with the scalpel handle, from the superimposed abdominal wall, and reach its border, whereupon intestinal coils or the surface of the tumor will come to view.

In order to avoid this accident as much as possible, I always enter the peritoneum at the upper angle of the incision.

2. *It is a matter of the utmost importance to secure deep and firm union in the line of the abdominal incision*, in order to avoid the occurrence of ventral hernia in the convalescent; not only should the sutures be heavy, deep laid, well applied, and the edges well adapted on the peritoneal surface, which is by far more important than perfect external adaptation, but, as soon as the wires are removed, straps of adhesive plaster and well-fitting, home made bandages should be applied, to remove any strain from the abdominal wall; the bowels should be kept in good condition,

muscular effort should be avoided, and a strong, well-made bandage or abdominal supporter should be worn for the first month at least.

Ventral hernia is more common than is usually supposed in convalescents from ovariotomy, because it is not a pleasant occurrence to relate, and, moreover, the patients pass out of sight.

3. *Hemorrhage should be stopped by the ligature, and the finest braided silk should be used.*

Torsion, pressure and cauterization, chemical or actual, are unreliable, harmless upon an exposed surface, but dangerous in a cavity once closed: moreover, the tissues are injured and irritated thereby; every doubtful point should be at once and carefully ligated with the finest braided silk, and the ligature cut short and dropped without further loss of time. If of good quality the very finest silk will answer every purpose, and may be relied upon to be as harmless as cat-gut and by far safer—it *need* not be carbolized provided it be *clean.*

4. *Listerism, as routine treatment, is not only to be avoided, but it is to be dreaded by the ovariotomist.*

Reflection and practice both have forced me to this conclusion, which I will not here elaborate, however bold it may appear; but even in the face of authority at the present time this assertion will be deemed deserving of consideration, if I say that Keith, the great ovariotomist, is convinced of this as a truth, and Lister himself warns of the dangers of carbolic acid to delicate tissues and constitutions.

I rely upon absolute cleanliness of patient, operator and assistants, of room and bedding, sponges and instruments. My sponges are steeped for twenty-four to forty-eight hours previous to the operation in a carbolized or other disinfectant solution, and two sprays are directed, over bed and operating table, for one-half or one hour previous to the operation, and during the operation itself, from some distance and height over the operator, but not so as to admit of carbolic acid being felt in any way.

Carbolic acid, although in a measure harmless and even beneficial, is dangerous, as the numerous incidents of carbolic-acid poisoning, gradually accumulated, testify; and dangerous in particular to so delicate a membrane as the peritoneum; hence, let us be more careful in its use, and, above all, do not attempt to perform ovariotomy strictly under the spray with full antiseptic precautions, in the now accepted sense of the term.

5. Last, but most important, I would advise surgeons in the Mississippi Valley *to operate early*—to give up the *old* and *fatal* rule of *operating only when life is endangered.*

Ovariotomy is looked upon as a desperate and almost necessarily fatal resort in this very valley in which McDowell first originated the operation—experience has indeed proven it a dangerous operation here—and why? Merely because surgeons have acted on the antiquated rule of not operating until life is endangered; then it is too late; the powers are failing; the tumor is encroaching upon vital organs; it is infecting the system; the patient no longer has powers of resistance; she sees death imminent and *now demands* the operation of the surgeon; and now it is almost necessarily fatal.

The surgeon operates in rare instances, and then under the greatest disadvantages. If suffering women would but understand how greatly their chances are increased by an early operation, and if physicians would but urge this upon them, we would have comparatively few fatal cases; women would hasten to the surgeon as soon as an abdominal enlargement is discovered, and they would look forward to the operation as a means of relief and prolongation of life, and not as a means of hastening death.

Ovariotomy would at once come to be an operation accepted and acknowledged by the profession and the people, and *fatal cases would be those, as in all other tumors, in which the patient has waited too long,*

SAINT LOUIS
COURIER OF MEDICINE
—AND—
COLLATERAL SCIENCES.

Published for the

Medical Journal Association of the Mississippi Valley.

The COURIER OF MEDICINE is published monthly, in the city of St. Louis, under the auspices of the Medical Journal Association. It is the aim of the Association to conduct a journal which shall represent the medical interests of the Mississippi Valley; both by enabling the practitioners, in this extensive region, to present their experiences in the treatment and pathology of diseases, as met with in daily practice, as well as to bring to them, in a concise and practical way, the results of scientific research elsewhere. We believe that we are justified in saying, that the objects of the journal have been faithfully carried out. The COURIER being the property of a large number of physicians, residing in different portions of the surrounding states, and representing widely varied interests, is thoroughly independent, and free from the control of local influences.

The Association desires to call the attention of the profession to the special features of the COURIER:

Original Communications. This department will consist of papers on general questions in medicine, and on the etiology, diagnosis, therapeutics, and pathology of special affections.

Original Lectures. Arrangements have been made by which we shall be enabled to present to our readers, didactic and clinical lectures, from physicians connected with the various schools and hospitals of the United States and Europe.

Society Proceedings. We shall give, during the coming year, monthly reports of the ST. LOUIS OBSTETRICAL AND GYNECOLOGICAL SOCIETY, and the ST. LOUIS MEDICO-CHIRURGICAL SOCIETY. The papers read before the OBSTETRICAL SOCIETY, will likewise appear in this journal. As in the past, our own reporters will attend the conventions of all State and National medical and sanitary bodies. The proceedings of county and district organizations, will find a welcome place in our columns.

Editorials. Our editorial space will be devoted to critical reviews of important medical topics, giving briefly and concisely the sum of recent progress in all the departments of medicine, surgery, and the collateral sciences.

Monthly Reports on Therapeutics. In each issue of the journal will be published, carefully prepared extracts, taken from the original sources, in our large list of home and foreign exchanges, of everything that relates to the treatment of disease. This feature has met with the cordial approval of practical men.

Reviews. Particular attention will be given to critical and analytical reviews of books, which shall be honestly made, uninfluenced by any other considerations than the actual merit of the work under notice.

Correspondence. Our department of correspondence will contain letters from the various sections and cities of this country and from Europe, treating upon all matters of interest and profit to the profession.

Extracts, Abstracts and Notes. All articles of real value, in our home and foreign exchanges, short items of interest, appointments and honors, etc., etc., will find a place under this head.

Translations. These will appear regularly in each number, thus giving to our readers the benefit of our German, French and other exchanges.

SUBSCRIPTION: $3.00 per annum; Single Number 35 Cents.

Address J. H. CHAMBERS & CO.,
401, 403, 405 N. THIRD STREET, ST. LOUIS.

Address Exchanges, Books for review, and all matter pertaining to the Literary Department to DR. R. M. NELSON, Editor, cor, Garrison and Easton avs., St. Louis, Mo